

REMARKS

The foregoing Amendment and Remarks which follow are responsive to the Office Action mailed October 1, 2004 in relation to the above-identified patent application. In that Office Action, the Examiner rejected Claims 1-4, 7-11 and 14 under 35 U.S.C. §103(a) as being unpatentable over the combination of the Ruzic and Kelly references. Additionally, the Examiner rejected Claims 17-20 under Section 103(a) as being unpatentable over the combination of the Ruzic, Kelly and Harrison references. Claims 1-20 were also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-11 of Applicant's U.S. Patent No. 6,437,703. Importantly, the Examiner indicated that Claims 5, 6, 12, 13, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As a preliminary matter, submitted herewith for the Examiner's consideration is a duly executed Terminal Disclaimer wherein Applicant has agreed to disclaim that term of any patent issuing in relation to the present application which extends beyond the expiration date of its U.S. Patent No. 6,437,703. Applicant respectfully submits that the submission of this Terminal Disclaimer has effectively overcome the obviousness-type double patenting rejection advanced by the Examiner in relation to Claims 1-20.

To address the Section 103(a) rejections advanced by the Examiner, by this Amendment, Applicant has amended each of independent Claims 1, 8 and 17. More particularly, independent Claim 1 has been amended to describe the trigger mechanism as being sized and configured to selectively engage the top and bottom pads and the switch. Similarly, independent Claim 8 has been amended to describe the trigger mechanism as being sized and configured to selectively engage the top and bottom inner and outer pads and the switch. Similar to Claim 1, independent Claim 17 has been amended to describe each trigger mechanism as being sized and configured to selectively engage the top and bottom pads and the switch of a respective one of the housings.

Applicant respectfully submits that independent Claim 1 as amended is not rendered obvious by the combination of the Ruzic and Kelly references. In amended Claim 1, the trigger mechanism is described as being rotatably connected to the housing, and sized and

configured to selectively engage the top and bottom inner and outer pads and the switch. In Claim 1, the switch is also described as communicating with an interior chamber which is collectively defined by the inner surface of the side wall and the top and bottom plates of the housing. The top and bottom pads are described in Claim 1 as being disposed on the inner surfaces of respective ones of the top and bottom plates. Due to the configuration of the trigger mechanism, the same is operative to engage not only the switch, but the top and bottom pads disposed on the top and bottom plates, respectively, as well.

The Ruzic reference discloses a position-sensitive educational product comprising a cylindrically configured inner support 38 which the Examiner corresponds to the side wall recited in Claim 1. Disposed within the inner support 38 is a battery pack 34. One end of the inner support 38 is enclosed by a removable cap 32 which the Examiner corresponds to the top plate recited in Claim 1. Opposite the removable cap 32 is a speaker 44 which is disposed within the interior of the inner sleeve 38 and is electrically connected to the printed circuit board 42 via electrical connections 46, 48. Applicant respectfully submits that the characterization by the Examiner in the Office Action of the speaker 44 as corresponding to the bottom plate recited in Claim 1 is in error, as is the characterization of the connections 46, 48 as corresponding to the bottom pad disposed on the inner surface of the bottom plate.

As further disclosed in the Ruzic reference, a plurality of position sensing mechanisms 50 are attached to that side of the printed circuit board 42 disposed closest to the speaker 44. As shown in Figures 3a and 3b of the Ruzic reference, in one embodiment, each position sensing mechanism 50 comprises an angularly oriented slide tube 126 having a magnet 130 moveably disposed therein. The magnet 130 is operative to actuate a corresponding Reed switch 136 attached to the printed circuit board 42 when the magnet 130 slides within the tube 128 to a position proximate such switch 136. In a first alternative embodiment of the position sensing mechanism 50 shown in Figure 4, a conductive ball 140 is able to roll within an angularly oriented hollow tube 142 into and out of conductive communication with a corresponding contact 146 disposed on the printed circuit board 142. In a second alternative embodiment of the position sensing mechanism 50 shown in Figure 5, an opaque weight 150 is moveable within an angularly oriented hollow tube 148 to selectively block the light path between a transmitter 152 and a detector 156 which are each attached to the printed circuit board 42.

From the foregoing, it is readily apparent that neither the magnet 130, conductive ball 140, or opaque weight 150, even if construed to comprise a “trigger mechanism,” is rotatably connected to a housing as is recited in Claim 1, or is sized and configured to selectively engage both top and bottom pads and a switch. In this regard, it is only the embodiment of the positioning sensing mechanism 50 shown in Figure 4 of the Ruzic reference wherein the conductive ball 140 is capable of physically engaging the corresponding contact 146. However, within this particular embodiment of the position sensing mechanism 150, the conductive ball 140 is clearly not configured to engage top and bottom pads (i.e., a second contact in addition to the contact 146), as well as a switch which communicates with the interior of the inner support 38. Indeed, if the contact 146 satisfies the switch limitation as asserted by the Examiner, the Ruzic reference is devoid of any teaching or suggestion regarding top and bottom pads which, along with the switch, are selectively engaged by the same trigger mechanism (i.e., the corresponding conductive ball 140). The connections 46, 48 characterized by the Examiner as the pads are nothing more than connections for the speaker 44, and are clearly not adapted or positioned to be engaged by the conductive ball 140 of any of the position sensing mechanisms 50. As is apparent from Figure 1 of the Ruzic reference, the connections 46, 48 are actually disposed on that side or face of the printed circuit board 42 opposite that having the position sensing mechanisms 50 mounted thereon. Thus, Applicant respectfully submits that the Ruzic et al. reference clearly does not teach or suggest the structural and functional attributes of the sensor as recited in amended Claim 1.

Further, Applicant respectfully submits that the deficiencies of the Ruzic reference discussed above are not alleviated by reliance upon the cited Kelly reference. In the Office Action, the Examiner relies upon Figures 12-14 of the Kelly reference for the purported teaching of top pads 18a, 18b, 16 on the inner surface of a top plate. In the embodiment of the clinometer shown in Figures 12-14 of the Kelly reference, a conductive ball 20 is moveable within a complimentary groove 93 formed in a planar surface 92 of a cover 90. The cover 90 is enclosed by a substrate 80 having a conductor ring 12 and a resistor 14 formed on one face thereof, the conductor 12 and resistor 14 being separated by a circularly configured gap 81. When the cover 90 is engaged to the substrate 80, the ball 20 rolling within the groove 93 contacts both the resistor 14 and conductor 12. This complete circuit is

connected to terminals 16, 18a, 18b which are disposed on that face of the substrate 80 upon which the conductor 12 and resistor 14 are also formed.

As is readily apparent from the Kelly reference, the terminals 16, 18a, 18b do not comprise contacts or pads which are directly engaged by the ball 20. Rather, the terminals 18a, 18b are disposed well inward of the rotational path of the ball 20, with the terminals 16 being disposed well outward thereof. Thus, Applicant respectfully submits that the Kelly reference not only fails to alleviate the above-described deficiencies with regard to the teachings of the Ruzic reference as it relates to amended Claim 1, but even fails to provide the teachings for which it relied upon by the Examiner.

On the basis of the foregoing, Applicant respectfully submits that independent Claim 1 as amended is not rendered obvious by the combination of the Ruzic and Kelly references, and is in condition for allowance, as are Claims 2-7 as being dependent upon an allowable base claim.

Referring now to independent Claim 8 as amended, Applicant respectfully submits that the same is also in condition for allowance for the same reasons previously discussed in relation to amended Claim 1. In this regard, the language of amended Claim 8 is similar to that of Claim 1, with the further recitation in Claim 8 of top and bottom "inner and outer" pads in addition to the switch. Thus, Applicant respectfully submits that independent Claim 8 as amended is in condition for allowance, as are Claims 9-16 as being dependent upon an allowable base claim.

Finally, Applicant respectfully submits that independent Claim 17 as amended is also in condition for allowance for the same reasons discussed in relation to amended Claim 1. The Harrison reference also cited by the Examiner in support of the Section 103(a) rejection of Claim 17 is used only for its purported teaching of multiple housings attached to each other, and does not alleviate the basic deficiencies of the Ruzic and Kelly references as discussed above. Thus, Applicant respectfully submits that independent Claim 17 as amended is also in condition for allowance, as are Claims 18-20 as being dependent upon an allowable base claim.

On the basis of the foregoing, Applicant respectfully submits that the stated grounds of rejection have been overcome, and that Claims 1-20 are now in condition for allowance. An early Notice of Allowance is therefore respectfully requested.

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If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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